Art Unit: 2811

04147-UPL

AMENDMENTS TO THE CLAIMS:

- 1. (Cancelled)
- 2. (Currently amended) A bonding structure with compliant bumps, comprising:

a device comprising:

a first substrate acting as a carrier;

at least a metal bonding pad on said first substrate, said metal bonding pad providing electrical conduction to said first substrate;

a first protection layer on a surface of said first substrate, said first protection layer covering an outside of said metal bonding pad and providing insulation and protection;

at least a compliant bump providing a conductive channel for said device; and at least a stopper for preventing said compliant bump from cracking during bonding;

a second substrate having at least a conductive electrode; and

a film between said device and said second substrate for bonding said device to said second substrate;

The bonding structure as claimed in claim 1, wherein said compliant bump further comprises:

a metal layer on top of said metal bonding pad and said first protection layer for bonding polymer material and said metal-bonding pad;

at least a polymer bump on said metal layer for providing the main body of said compliant bump; and

Art Unit: 2811

04147-UPL

a conductive layer covering said polymer bump and forming a conductive channel with said metal bonding pad and said metal layer.

- (Currently Amended) The bonding structure as claimed in claim 2, wherein said
 compliant bump covers said conductive layer [[of]] covers said polymer bump and the
 covered area ranges from 0.1% to 99% of the area of said polymer bumps
 substantially or partially.
- 4. (Currently Amended) The bonding structure as claimed in claim [[1]] 2, wherein said compliant bump has one of the shapes of rectangle, square, trapezoid, sphere, round column, cone, an irregular shape, and any combination of the above shapes stopper is distributed outside or connected with said compliant bump.
- (Currently Amended) The bonding structure as claimed in claim [[1]] 2, wherein said
 compliant bump has a convex-concave surface to-reduce the contact surface with-said
 second substrate to-lower the required bonding pressure.
- 6. (Currently Amended) The bonding structure as claimed in claim [[5]] 2, wherein the convex of said convex-concave surface has one of the shapes of rectangle, square, trapezoid, sphere, round column, cone, an irregular shape, and any combination of the above shapes said second substrate is an organic substrate or a non-organic substrate.
- 7. (Currently Amended) The bonding structure as claimed in claim [[1]] 2, wherein said compliant bump-is-clastic said stopper has a thickness different from said compliant bump.
- 8. (Currently Amended) The bonding structure as claimed in claim [[1]] 2, wherein said

Art Unit: 2811

04147-UPL

compliant bump is deformable said film is a conductive or non-conductive film.

9. (Currently Amended) A bonding structure with compliant bumps, comprising:

a device comprising:

a first substrate acting as a carrier:

at least a metal bonding pad on said first substrate, said metal bonding pad providing electrical conduction to said first substrate;

a first protection layer on a surface of said first substrate, said first protection layer covering an outside of said metal bonding pad and providing insulation and protection;

at least a compliant bump providing a conductive channel for said device; and

at least a stopper for preventing said compliant bump from cracking during

bonding;

a second substrate having at least a conductive electrode; and

a film between said device and said second substrate for bonding said device to said second substrate;

The bonding structure as claimed in claim 1, wherein said stopper further comprises:

- a metal layer on top of said-metal-bonding pad and said first protection layer for providing-bonding to-polymer-material; and
- at least a polymer bump on said metal layer for-providing the main body of said compliant bump.
- 10. (Currently Amended) The bonding structure as claimed in claim 9, wherein said

Art Unit: 2811

04147-UPL

stoppers are distributed over said device ranging from 0.1% to 99% of the area of said device second substrate is an organic substrate or a non-organic substrate.

11. (Currently Amended) The bonding structure as claimed in claim [[1]] 2, said-stopper has one of the shapes of rectangle, square, trapezoid, sphere, round-column, cone, an irregular shape, and any combination of the above shapes wherein said stopper has a

thickness different from said compliant bump.

12. (Currently Amended) The bonding structure as claimed in claim [[1]] 9, wherein said stopper is distributed outside [[of]] or connected with said compliant bump, and has one of the distribution shapes of spot, bar, continuous bar, delimited bar, are, fan, and

any other-shapes.

13. (Currently Amended) The bonding structure as claimed in claim [[1]] 9, wherein said stopper is distributed inside of said compliant bump, and said compliant bump has a convex-concave surface to-reduce the contact area with said-electrode of said second substrate to lower required pressure in bonding.

14-15. (Cancelled).

16. (Currently Amended) The bonding structure as claimed in claim [[1]] 9, wherein said

stopper is deformable said film is a conductive or non-conductive film.

17. (Currently Amended) A bonding structure with compliant bumps, comprising:

a device comprising:

a first substrate acting as a carrier;

Art Unit: 2811

04147-UPL

at least a metal bonding pad on said first substrate, said metal bonding pad

providing electrical conduction to said first substrate:

a first protection layer on a surface of said first substrate, said first protection layer

covering an outside of said metal bonding pad and providing insulation and

protection;

at least a compliant bump providing a conductive channel for said device; and

at least a stopper for preventing said compliant bump from cracking during

bonding;

a second substrate having at least a conductive electrode; and

a film between said device and said second substrate for bonding said device to said

second substrate;

The bonding structure as claimed in claim 1, wherein said device further comprises a

second protection layer formed by said metal layer and a polymer layer to provide

grounding and protect protecting said first substrate.

18. (Currently Amended) The bonding structure as claimed in claim 17, wherein said

polymer layer is on top of said metal layer and made of [[the]] a same material of said

polymer bump.

19. (Currently Amended) The bonding structure as claimed in claim 17, wherein said

second layer covers the area of said device ranging from 0.1% to 99% stopper is

distributed outside or connected with said compliant bump.

20. (Currently Amended) The bonding structure as claimed in claim 17, wherein said

13

Art Unit: 2811

04147-UPL

second protection layer is lower has a thickness smaller than the respective thicknesses of said compliant bump and said stopper.

- 21. (Original) The bonding structure as claimed in claim 17, wherein said second protection layer is connected to said stopper.
- 22. (Original) The bonding structure as claimed in claim 17, wherein said second protection layer is separate from said stopper.
- 23. (Currently Amended) The bonding structure as claimed in claim [[1]] 17, wherein said film is a conductive or non-conductive film.
- 24-26. (Cancelled).
- 27. (Currently Amended) The bonding structure as claimed in claim [[1]] 17, wherein said first substrate is an integrated circuit, a silicon chip or a silicon wafer compliant bump has a convex-concave surface.
- 28. (Currently Amended) The bonding structure as claimed in claim [[1]] 17, wherein said second substrate is a glass substrate, a polymer substrate, an organic substrate, a non-organic substrate, or a silicon substrate an organic substrate or a non-organic substrate.
- 29. (Currently Amended) The bonding structure as claimed in claim [[1]] 17, wherein said stopper structure is higher has a thickness larger than said second protection layer and has a different thickness height from said compliant bump.